

## ABSTRACT

An anti-g pressure regulator functions, in conjunction with a pressurized anti-g suit during high g loads, to supply O<sub>2</sub> to a pilot's face mask during the inhalation phase with the O<sub>2</sub> pressure rising from a predetermined minimum to a predetermined maximum as determined by the g load to increase the volume of O<sub>2</sub> supplied to the pilot's lungs. During the exhalation phase the pressure is allowed to fall from the maximum to the minimum to reduce the stress experienced by the pilot during exhalation thereby enabling the pilot to tolerate high g loads. Optionally, the pressure of gas supplied to the anti-g suit may be controlled in a nonlinear manner with respect to the anticipated range of g-loads to improve the pilot's performance during exposure to intermediate g-loads.